

Machine Learning and AI

What is AI?

Artificial Intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems.

These processes include learning (the acquisition of information and rules for using the information), reasoning (the manipulation of information to reach a conclusion), and problem solving (the selection of a sequence of actions to solve a problem).

AI is a broad field that includes many sub-fields, such as machine learning, natural language processing, computer vision, and robotics. Each of these sub-fields has its own set of challenges and opportunities.

Machine learning is a subset of AI that focuses on the development of algorithms that can learn from data and make predictions or decisions based on that data. It is one of the most rapidly growing areas of AI.

Natural language processing (NLP) is a sub-field of AI that focuses on the interaction between computers and human language. It includes tasks such as text processing, machine translation, and sentiment analysis.

Computer vision is a sub-field of AI that focuses on the development of algorithms that can learn from images and make predictions or decisions based on that data.

Robotics is a sub-field of AI that focuses on the development of algorithms that can control robots. It includes tasks such as motion planning, object recognition, and manipulation.

Behaviorism is a theory of learning that focuses on the role of external stimuli and reinforcement in shaping behavior. It is one of the most influential theories of learning in the field of psychology.

tradeoff is a concept in economics and decision-making that refers to the fact that resources are limited and choices must be made between different options.

“Demis Hassabis says Deepmind potentially a meta-solution to any problem” Deepmind says Reward is Enough

“causation” Demis Hassabis says any problem

Demis Hassabis says any problem

AlphaCode Alphabet/Google Deepmind Deepmind

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SAE level 4

AlphaGo Zero

logical positivism logical empiricism

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Universal Approximation Theorem □ Nash Embedding Theorems □□□□□□□□□□□□
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SAE level 4

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reward Deepmind Reward is Enough

A Treatise on Probability causation

causation

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“Confucius taught that marriage lies at the foundation of government.” causation

Marc Aurel Stein John Leighton Stuart

causation

Demis Hassabis Deepmind

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First, if scientists have tried, and failed, to come up with an alternative theory that explains a phenomenon well, that counts as evidence in favor of the original theory. Second, if a theory keeps seeming like a better idea the more you study it, that's another plus-one. And if a line of thought produced a theory that evidence later supported, chances are it will again.

Historia Naturalis Philosophiae Naturalis scientia naturalis

Are there really many worlds in the "Many-worlds interpretation" of Quantum Mechanics?the development of «decoherence theory» revealed that, using the standard formalism of quantum mechanics, macroscopically distinct branches of the wavefunction were almost entirely free from interference and

evolve approximately classically almost everywhere

The Many-worlds Interpretation

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Selfish gene

Waymo SAE level 4

Waymo crash data trade secret data

Deepmind Waymo

D-wave Google Quantum Supremacy